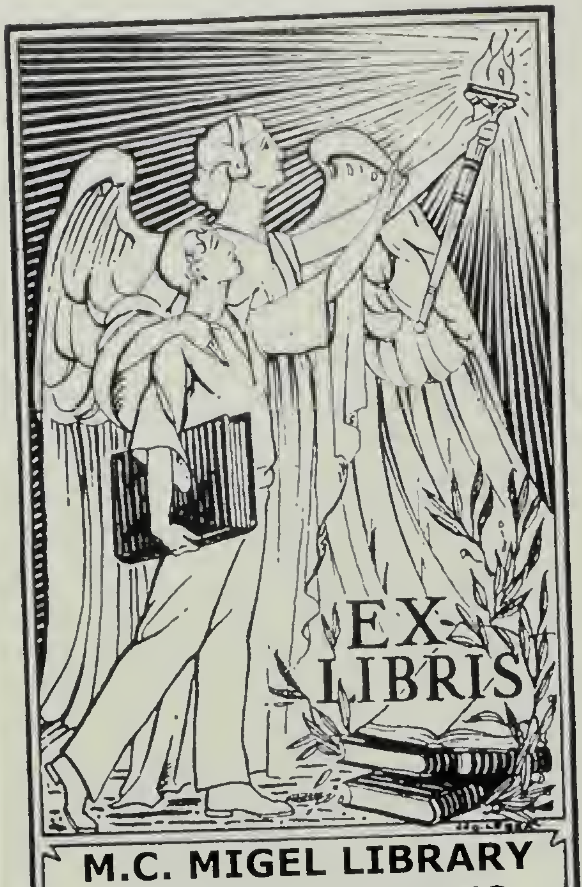
ANOTHER BEAM OF LIGHT THROUGH THE DARKNESS.

O. J. Hill



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Another Beam of Light Through the Darkness

O. J. Hill

THE fact that pupils had vague and erroneous ideas of size, shape, and texture of many objects not accessible to the touch had been challenging the superintendent and members of the faculty of the Ohio State School for the Blind, but the incident that seemed to make a remedy paramount came from absurd answers given in intelligence tests and class discussions. It was discovered that many pupils, even of adult age, had very little idea of comparison and proportion. Some believed a rat was as large as a rabbit, that a cow was nearly six feet high, that a sheep was just a little smaller, or that a robin was as large as an owl. On the other hand, many pupils of the school evidenced a keen desire to know just how the exterior of their school looked. As one pupil said, "All we know about our school is as high as we can reach with our finger tips." Some pupils wished to know what a modern house looked like compared with a Colonial or Cape Cod home. A pupil taking a course in the greenhouse knew what kind of flowers were best adapted for a formal garden, but had very little conception in regard to shape and arrangement of such a garden.

THE W.P.A. SHOWS A WAY

There was no question in the minds of those who were making the study that here was a field of vast potential educational value, wherein very little had been done. After giving the matter a great deal of consideration, it was decided that models of things seldom, if ever, *seen* by the blind would be the solution to the problem. Then the big question arose, how can we financially sponsor such a gigantic project? After many conferences with various officials, both national and state, the idea was sold to the administration of the W.P.A. Nearly $45,000 was set aside for the project.

O. J. Hill

WHAT SHOULD WE MODEL?

After this very generous response and interest shown by the national government in our idea, we were then able to attack

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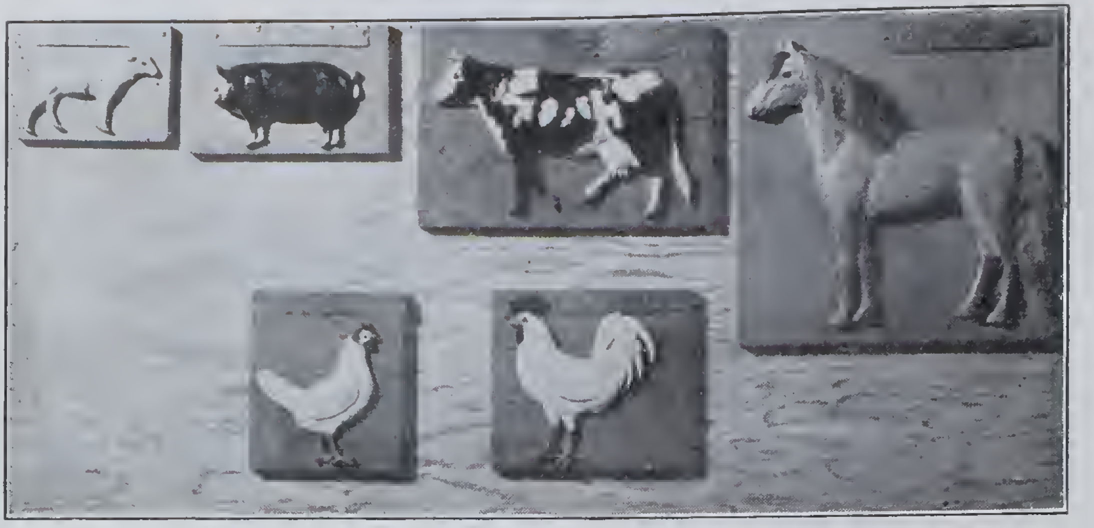
Mr. Hill presented a paper at the Detroit convention of the International Council on the same general subject as that of the accompanying article. The project related herein; namely, the construction of educational models for the blind, has gained national interest and attention. Besides being invited to accept ninety feet of space at the New York World's Fair for displaying the models, the Ohio School has been asked and has consented to loan six of them for a traveling exhibit at conventions throughout the United States.



The four animals, the horse, the cow, the hog, and the sheep are made in high relief but scaled down in size, each in the proper proportion to the other. The rooster and hen are scaled together.

other problems. There were many of them. For instance, of what things should we make models? One procedure in answering this perplexing question was to have each teacher submit a list of things he felt would be helpful in his class work. The second procedure was for the one in charge of the project to take an unabridged dictionary and all printed school texts that were especially rich in pictures, go through them carefully and set down everything that he felt would be of educational value to a blind pupil. Needless to say, an extremely long list resulted.

THE MATERIAL TO BE USED

Now came the question of material. What kind would be used for the various models? It was obvious that the same material used to construct a model locomotive or skyscraper would not do for birds and animals with their delicate feathers and soft fur. The idea of getting a taxidermist to mount the birds and small animals was abandoned, chiefly because the securing of specimens would be almost prohibitive; and for another reason, mounted birds, handled as they would necessarily have to be, would soon have the appearance of going through a first-class molt. It was decided to draw an outline of the birds and animals on wood and to build them up with modeling clay, plasticine, or plaster of Paris. What kind of wood was the next ques-

Five methods of controlling gully erosion. They are: (from left to right) by a series of dams, by fastening logs together, by vegetation, by a stone dam, and by means of posts bound together with wire.

Length, 78 inches; width, 27 inches; height, 6½ inches.

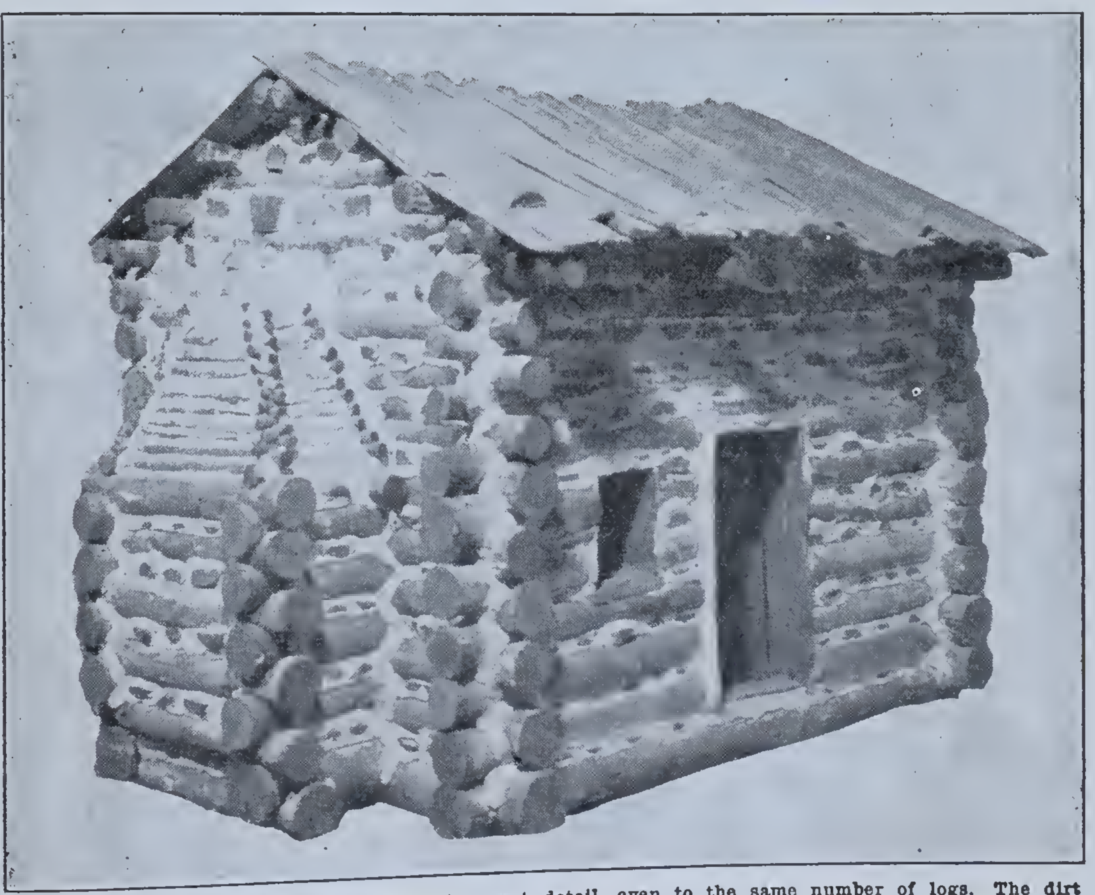
tion that arose? Masonite board or press board seemed to offer all of the desired features and few objections. It was very durable, had no grain, and would permit very close cutting with the saw. The birds were then cut out and built up in high relief with plasticine, details being worked in with modeling tools. We discovered that this material would take oil better than water coloring; consequently, after dressing down the edges with sandpaper, a coat of clear shellac was applied and the model was completed.

MAP MAKING

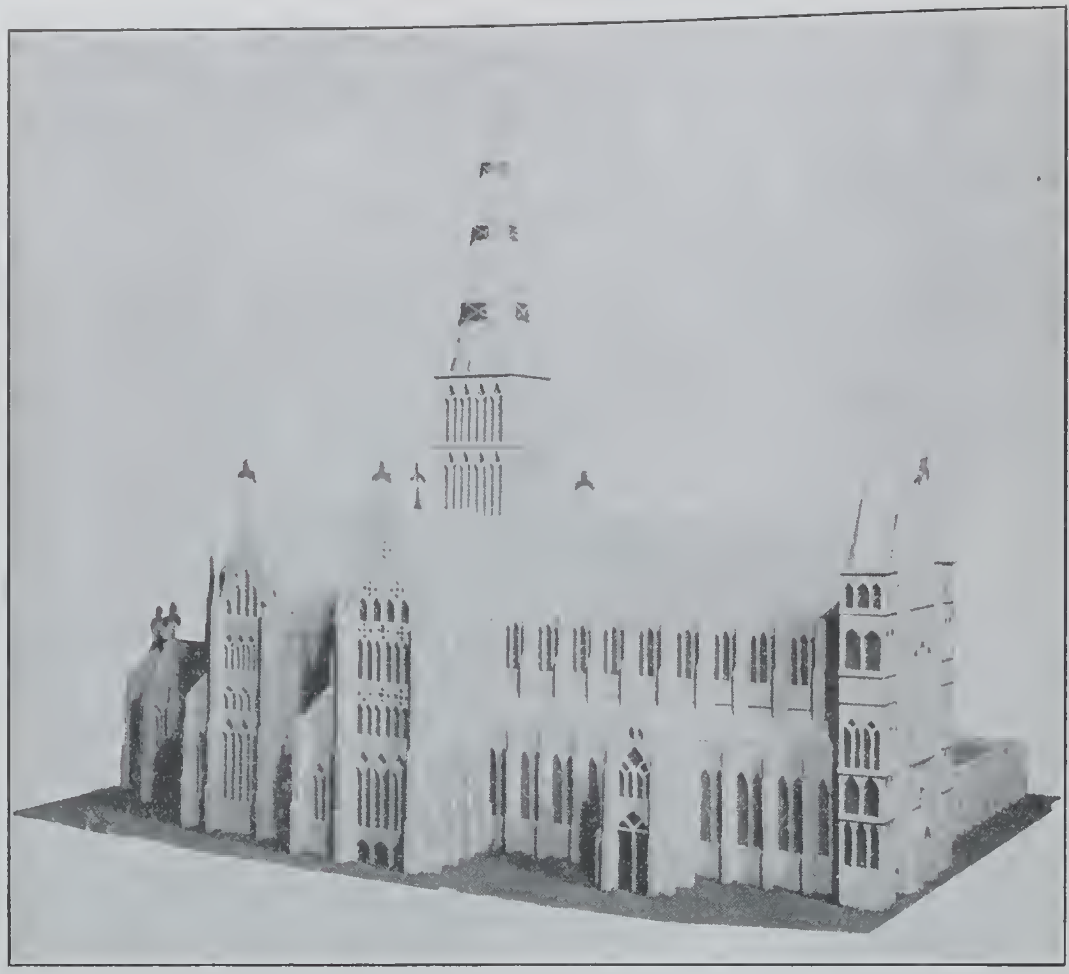
The construction of a relief map, showing five different ways that gully erosion could be checked, required something still different. It was decided to make the model on a board 15 by 20 inches, with gullies and ravines built up so that a blind pupil could easily detect the various methods of erosion control. The final procedure was to soak up newspapers in water, then mold them into shape as a skeleton for the ravines. This was covered with a plastic material, allowed to harden, and later painted. Dyed sponges were used to show shrubbery and trees. The results were excellent from the standpoint of educational value and artistic achievement.

THE USE OF A SCALE

To make the models of large objects it was necessary to scale them down. Arbitrarily, no model regardless of the size of the original, was allowed to exceed thirty-six inches in height or length. A brass tag embossed in braille



The birthplace of Abraham Lincoln in exact detail, even to the same number of logs. The dirt floor, the fireplace, chimney, and furniture are all in keeping with the original home of "Honest Abe." Length, 34½ inches; width, 28 inches; height, 27 inches.



Salisbury stands alone among English Cathedrals for unity of design. Very restricted use of Early English style, as it was practiced from A. D. 1220 to 1258.
Length, 39½ inches; width, 32 inches; height, 36½ inches.

was attached to the model giving the name, dimensions, and scale for extension. If the model were constructed twenty-five inches long and the scale would read, "one inch equals four feet"; in which case the original would be one hundred feet long. Thus the pupil can use the axes' measure, vertically and horizontally, and get the actual dimensions of the original.

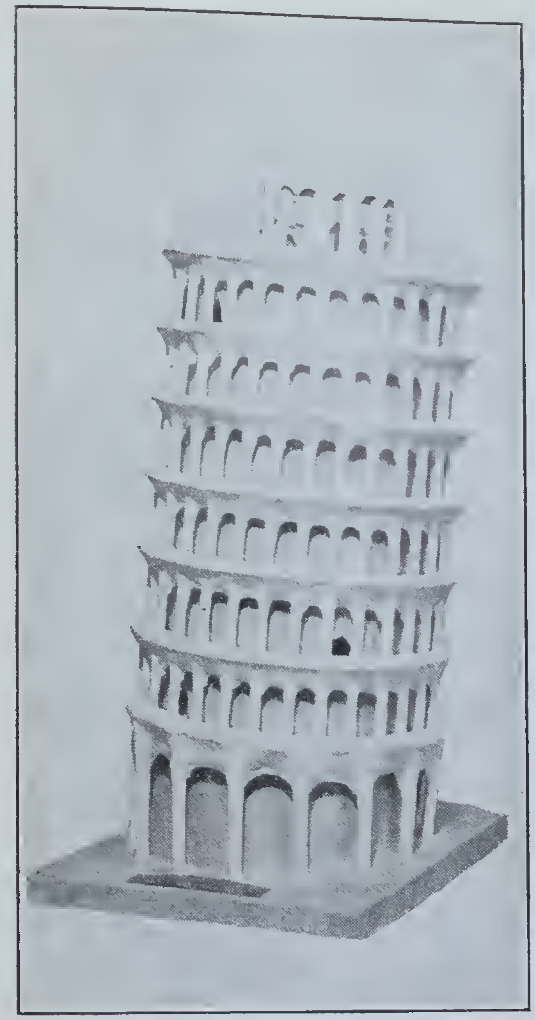
DEVELOPING A SENSE OF PROPORTION

Please understand that we realize an animal or a bird built up with modeling clay, does not have the same *feel* as the original animal. Neither does it have temperature, movement, or the silky texture of feathers and fur; but our models do make it possible for the child to draw a comparison in size and to correct his sense of proportion.

EACH MODEL A NEW PROBLEM

When we came to the task of constructing models of different buildings, the question of material arose again. The carving of windows and ornamentations out of wood was abandoned because of the cost of machinery and time involved. Plasticine was used for designs and ornaments of the United States Capitol; and for the skyscraper model, it was found effective to glue strips of masonite to the flat sides for windows.

To give the lighthouse the *feel* of



This celebrated marble bell tower in the Italian city of Pisa is worthy of rank among the seven wonders of the modern world. It was begun in 1174 and completed in 1350. The structure commenced to dip after the first three galleries had been constructed.

Height 36 inches.

concrete, a flat white paint was spread on the metal cylinder with white sand carefully worked into the paint. Lincoln's birthplace was modeled as nearly as possible like the original log house, even to the same number of logs as in the original. The Taj Mahal, the Salisbury Cathedral, and the pre-revolutionary home, such as Mount Pleasant, required different planning and different material for each.

The making of relief maps presented still another problem. How could we, for instance, make a relief map of Ohio, showing elevations and county divisions, so that each of the eighty-eight counties could be taken out and replaced? How could we saw through the masonite board and Gesso and have a perfect fit of parts when placed back into the frame?

HOW THE EDUCATIONAL MODELS ARE USED IN THE LEARNING PROCESS

It became quite obvious, after the models of the famous buildings of the world had been completed, that it would be necessary for the teacher to become thoroughly familiar with the historical background as well as the details of any original building before she could adequately present it to the pupils.

Anticipating this need, the research department delved through many volumes dealing with the social, political, and historical importance of each structure, and the interesting features of its construction. All this material was compiled and put into a pamphlet to be distributed to the teachers and pupils. Accompanying these descriptions were suggestions explaining how the teachers might proceed in presenting the models to their classes. One way suggested was to build up an approach to the model by reading all available material pertaining to the original. Thus, when the model is presented, the pupils have a working knowledge about it at the start.

Another method followed by some of our teachers was to present the model at the start, allowing the pupil to explore and ask questions as they continued to investigate. In the lower grades many lessons in English, history, geography, and spelling were developed from the replica of Abraham Lincoln's birthplace.

At other times the teacher of literature has found it very helpful to bring before her class a model of an Elizabethan theater, a Colonial home, or a model of Stratford-on-Avon.

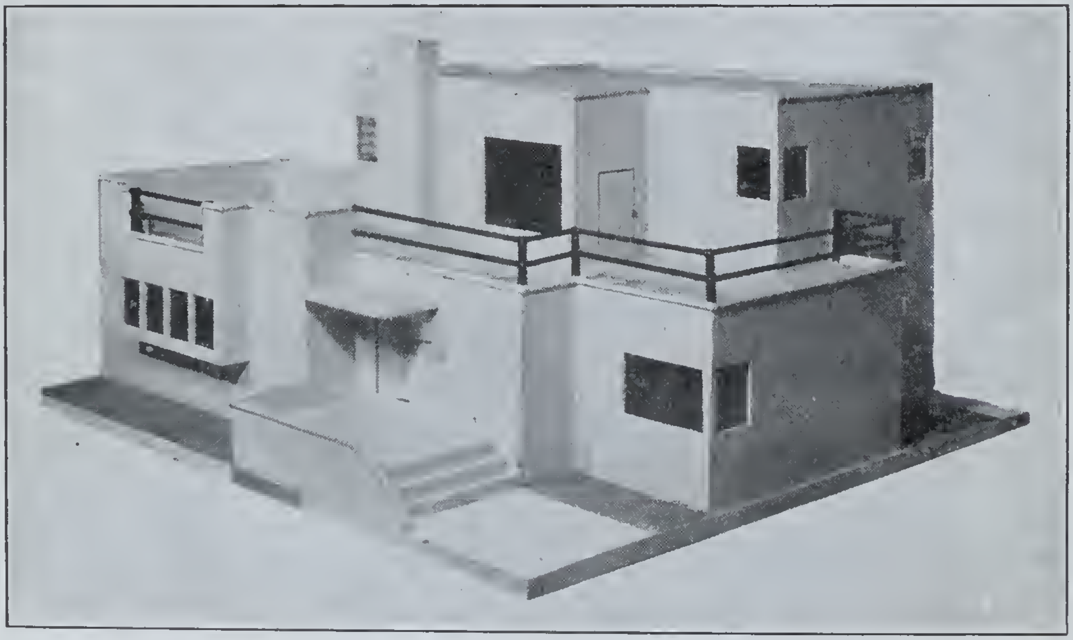
Our Latin teacher speaks highly of the replica of the Roman home as a teaching device: "The House of the Tragic Poet was excavated in 1824, at which time the number and beauty of its paintings aroused universal admiration. Unfortunately some have been removed and others have perished. The subjects of the paintings were all taken from the *Iliad.* I use them to introduce various incidents of the *Iliad* with which the boys and girls would otherwise have had no contact.

"A wealth of ancient stories and mythology is opened up by other paintings. The class was especially curious about the two men, Daedalus and Icarus, who are depicted with wings and whose story represents a belief in aviation even among the ancient Romans.

"Other than art, religion, and mythology, there is much to represent the daily life of the Romans. The richness and elegance of their mural decorations is offset by the scarcity and discomfort of the furniture. Two types of lamps are shown in this home, one suspended from the ceiling, and the other a tall lamp resting on a tripod.

"It is a shame that all Latin classes cannot have such a project as this to foster interest in a people whose language they are studying. The boys and girls understand more clearly through the study of this model that the Romans were a people who actually did exist and who attained a high degree of culture and refinement as well as military power."[1]

As one of our English teachers expresses it: "The aim of composition work, whether oral or written, is to help boys and girls to discover things they want to say and then enable them to say these things as well as possible. This is sometimes quite difficult for those who do not see. In having these replicas, and the necessary information regarding them, we have created a sit-



A replica of a modernistic home, constructed with corner windows and glass brick to admit more light. An upper and lower sun deck for entertainments and gatherings is shown.
Length, 32¼ inches; width, 34½ inches; height, 16½ inches.

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[1] Helen Kramer, Latin teacher, Ohio State School for the Blind.

uation that aids this expression. Certainly it enables our boys and girls to answer more accurately the many *when's, where's, who's, what's,* and *why's,* and intensifies their sense of responsibility to become familiar with reference material from which to make their own notes, and to preserve their memoranda."[2]

The teachers of the primary grades make effective use of the models of birds and animals. One of them reports as follows:

"Visual and other sensory aids to instruction are very valuable. The school models are not a fad but an efficient and workable means of bringing the blind child in actual contact with those things about which he attempts to learn. They play an important part in the education of the youngest as well as of the oldest child. They strengthen his spirit of iniquiry, create social relationships that reach beyond the doors of the classroom, and provide greater opportunity to live and learn naturally.

"The following units, based on aroused and fostered interest in birds on our campus, were developed through the year.

PROBLEMS AND QUESTIONS THAT LEAD TO INVESTIGATION

A. General Problems and Questions
  1. What are the birds that are most abundant in the vicinity of the school?
  2. What birds stay the entire year?
  3. Classify the common birds as to migration

B. Specific Problems and Questions about the Blue Jay
  1. How distinguished
  2. Flight—rapid or leisurely
  3. Color—advantage or disadvantage
  4. Where found
  5. When does it molt?
  6. Where does it lay its eggs? When?
  7. Describe eggs—shape, size, color, number
  8. Food

FINDING ANSWERS TO PROBLEMS AND QUESTIONS

A. Through Use of Arithmetic
  1. Number of eggs
  2. Number of young birds
  3. Size—length, wing, tail, bill, body, legs

B. Through Language and Reading
  1. Oral reports given of individual observation
  2. Class discussions held concerning facts discovered by inspection and in reading labels and library books

C. Through Music
  1. Victrola records of bird calls
  2. Songs

MEANINGS, ATTITUDES, AND APPRECIATION PROBABLY DEVELOPED

A. An attitude of curiosity about birds and their relation to plants, insects, and people

B. A recognition of the economic value
  1. Insect eaters
  2. Weed seed eaters
  3. Flesh eaters
  4. Scavengers

C. An appreciation of the beauty and interesting characteristics they display

D. Understanding of respect for the rights of all living things

F. An eagerness to share experiences and observations

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[2] Lillian Marshall, head of English department, Ohio State School for the Blind.

"New interest foreshadowing further units of work in other phases of nature, as trees, wild flowers, and insects will lead to use of other models, which also can be developed along similar plans. Through numerous activities the children are making more vital and real contacts through more models. Their interests and concepts have become wider and they use their leisure time more advantageously."[3]

A teacher of the fourth grade makes the following contribution: "Every boy and girl has the desire to know how things look, and many of those things are now made more realistic through the use of models at Ohio State School for the blind. In the fourth grade, many of these models are used very effectively. For example:

The Lighthouse

Arithmetic — The scale 1 inch equals 3 feet. It involves measurement and arithmetical fundamentals in a real problem to get the actual size of various parts.

Geography—A better understanding of the life of people who care for the lighthouse is gained; also how the lighthouse aids navigation.

Spelling—Different words associated with the lighthouse and its keepers used as a basis for spelling lesson.

Reading—Stories centering around lighthouses are requested, and individual interest is built up to do more outside reading.

English—It stimulates creative stories with the lighthouse as a central idea."[4]

In order to provide constructive work for the blind pupils of the lower grades an activity program has been arranged to follow the presentation of the models. This plan consists in having the pupils construct with building blocks and the sand table similar models, transferring their conception of the original model to the one they are building. This procedure has been found to be most efficient as a *follow-up* device.

The following quotation was taken from the Columbus Citizen paper: "Miss Hazel Hurst, twenty-five-year-old lecturer, blind since birth . . . . received one of the greatest thrills of her life in Columbus yesterday. Miss Hurst was taken by officials of the School for the Blind into a room where models of large objects have been constructed for the education of blind children.

" 'There were models of log cabins, houses of all kinds, buildings, skyscrapers, churches,' Miss Hurst said. 'It is a pioneering work they are doing here. I have never heard of anything like it before.

" 'For the first time in my life, I learned the real difference between a Colonial type of house and one of modern design. I learned how a skyscraper towers up into the air above other buildings.

" 'In the past, I have walked around buildings and felt the exteriors of them; but it was impossible to get a true conception of the whole.

" 'Last summer I toured through France, Italy, and Germany, visiting the greatest cathedrals in the world. But yesterday, feeling that small model of a church, I learned more about the beauty of them, the spires and the steeples than I ever knew before.' "[5]

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[3] Alice Chatfield, primary teacher, Ohio School for the Blind.

[4] Mary Ross, fourth grade teacher, Ohio State School for the Blind.

[5] *The Columbus Citizen,* November 5, 1938, page 1.

A lighthouse, a cathedral, a skyscraper, a modern home, or a log cabin are not merely words now. Their descriptions through the use of models have been made tangible and, therefore, clearer.

A special room has been arranged for storing the models where the teacher may go and receive the one she desires in very much the same manner in which she would go to the library to secure a book.

We are not engaged in making toys but rather educational devices so that many things that have never been *seen* by blind pupils before may be visualized now for the first time. It is our aim to make it possible for a blind pupil to get the correct conception of things beyond the reach of his finger tips. To this extent we have been successful, judging by the enlightened faces of those who have examined the models. Their enthusiasm is contagious. "Oh, I never knew it was like this!" "For what is this used?" "How interesting!" "It's wonderful!" These expressions are continually heard as the blind child's fingers rapidly take in every detail of the model.

Thus, it is our sincere hope that we have made it possible for *another beam of light to shine through the darkness.*

◆

~~Service to the Deaf~~

~~*(Continued from page 128)*~~

~~years of work, and to look forward to further years of usefulness in this field.~~

~~It is believed that the semi-centennial in Providence will have a large attendance. All who are interested in the education of the exceptional child are invited to be present. News of the program will be published from time to time in the Volta Review.~~

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Education for Citizenship, Culture, and Leisure Time.

~~SPECIAL education has made a good point, too, in emphasizing the making of good citizens and congenial companions, an objective of all education. Through the constant use of handwork in an activity the child is oriented to many crafts that may develop into hobbies. These hobby interests give him an independence of others for deriving personal satisfaction in later life. It is the essence of any leisure-time program. In addition to the classroom activities—games, parties, and other purely social activities provide the child with object lessons in living together.~~

~~DR. CHARLES M. MORRIS, *resident psychologist,*~~
~~*The Woods School, Langhorne, Pennsylvania.*~~

◆

~~Reconcile These~~

~~THE phrase "nothing succeeds like success" which had become worn in educational textbooks was reborn in the special class and has taken on a new significance. Projects are selected primarily on the basis of their success value and children learn not only by doing, but by doing what they can do. Mental measurements, too, is following this lead by testing, not to catalogue the child's limitations, but to discover his capabilities and to make recommendations for their fullest development.~~

~~DR. CHARLES M. MORRIS, *resident psychologist,*~~
~~*The Woods School, Langhorne, Pennsylvania.*~~

~~Too much early success in the artificial atmosphere of a school means that a child will grow up thinking that the world is his personal oyster.~~

~~PROFESSOR DANIEL A. PRESCOTT, *University of Chicago*~~

Education of the Handicapped Child For Social Competency

Mabel R. Farson

THE feeling of inferiority is the fundamental factor in maladjustments of the personality. Dr. Alfred Adler, the late Vienese psychiatrist, deduced that the self-assertive impulse was the dominant, positive force in life and the impulse most subject to frustration from environment, and from the individual's own sensitiveness. The physically handicapped child from an early age has forced upon him the recognition of the fact that he cannot do many of the things that other children do. That is, he cannot participate in the active games of children. Perhaps he does not have the energy or endurance to compete adequately with them, or he is prevented from adequate participation by some sensory defect. This makes for a feeling of frustration, which sows the seed of maladjustment, usually long before the child enters school. The same is true of the mentally retarded child. He may be too slow to keep up with his fellows—or his slowness and his lack of complexity may result in a persistently poor showing in games. Sometimes because of an infantile social development, he is shunned by children of his own age; and often at school in a regular grade he is mocked and scorned by his classmates for his dullness. If placed in a special class he is all too often taunted about this placement by children, and even by his own parents who cannot tolerate the thought that their child can be in any way inferior. Much has been accomplished with reference to a better attitude on the part of the public toward what the special class is doing for the child, but there is still room for much education along this line. The feeling of inferiority which is engendered when a recognition of his inadequacy is forced upon the child is intolerable to him, and he reacts against it either constructively or destructively; that is, this feeling of inferiority may be the stimulus to real achievement or the source of misconduct and maladjustment. As teachers we are familiar with the intellectually dull child who becomes a bully and a neighborhood terror or in milder words, the destructive child. He is the child

Mabel R. Farson

• MABEL R. FARSON, PH. D., is supervisor of mental examinations for the Division of Special Education of the Philadelphia Public Schools, Pennsylvania. She also serves as psychologist for the John Edgar Thomson Foundation of the same city.

Part of her undergraduate work was done at the Philadelphia Normal School, where she began her study of special class teaching. Later she majored in psychology, receiving both her bachelor of science in education and doctor of philosophy degrees from the University of Pennsylvania.

Dr. Farson's professional affiliations include the American Psychological Association, the Pennsylvania Association of Clinical Psychologists, and the Pennsylvania State Chapter (The Pennsylvania Conference for the Education of Exceptional Children) of the International Council for Exceptional Children.

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